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TEXTILE *Technology* DIGEST

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TEXTILE TECHNOLOGY DIGEST

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ABSTRACTS

FIBERS A

Elastic properties of textile fibers. Part 3.

P. S. Nagar. *Man-Made Textiles 32:* 66-70 (October, 1955).

Molecular orientation and crystallinity, compliance ratio, and fabric crease recovery are discussed.

Nature of fiber friction.

B. Olofsson (Swedish Institute for Textile Research). *(Letter to the editor). Textile Research J. 24:* 1002-1003 (November, 1954).

NATURAL FIBERS A 1

Improving natural fibers.

L. C. Leatherland (Battelle Memorial Institute) *Fibres 16:* 348-349, 367 (October, 1955).

A general discussion of modifications of cotton and wool.

Effect of weathering in the field on the fiber properties of cotton.

L. E. Hessler, J. D. Towery and B. K. Power (Texas Technological College). *Textile Research J. 24:* 1010-1014 (November, 1954).

This paper is concerned with what happens to cotton from the time the boll opens until the cotton is ginned. Weathering due to temperature change, drying, and oxidation of the cellulose by sunlight is studied. 8 references.

Cotton quality and fiber properties. Part 2. Cavitomic cotton.

H. Wakeham, H. Stickley and N. Spicer (Textile Research Institute). *Textile Research J. 24:* 1037-1047 (December, 1954).

This study was undertaken to determine what changes in cotton fiber properties resulting from the cavitoma might be responsible for the reduction of processing efficiency and a lowering of yarn quality. It was concluded from this study that some of the fibers are subjected to a localized weakening as a result of microbial action, either directly or as a result of enzymatic action during storage. These fibers break more easily in processing than fibers in the normal cotton, giving rise to a length distribution biased in the direction of short fibers. This difference in fiber-length distribution is believed to be responsible for the reduction in cotton quality characteristics. 14 references.

Cotton quality and fiber properties. Part 3. Effects of drying at high temperatures prior to ginning.

D. J. Leitgeb and H. Wakeham (Textile Research Institute). *Textile Research J. 24:* 1047-1057 (December, 1954).

The increased use of drying and cleaning equipment at cotton gins has occasioned complaints from spinners that the quality characteristics of cottons are being lowered due to overdrying of the seed cotton prior to ginning. The present study was undertaken to clarify the effects of overdrying on the processing characteristics of cotton and to determine any changes in fiber properties relating thereto. Tests for the fiber number-length distributions showed that both before and especially after processing through roving the excessively dried cottons consisted of more short and fewer long fibers than the control cotton. It is believed that the presence of many short fibers is the main cause of processing difficulties and reduced yarn quality. 17 references.

Microscopical study of the effects of some typical chemical environments on the primary wall of the cotton fiber.

V. W. Tripp, A. T. Moore and M. L. Rollins (Southern Regional Research Laboratory). *Textile Research J. 24:* 956-970 (November 1954).

The topography and structure of the primary wall of the cotton lint fiber are described and illustrated by electron micrographs. The changes in this thin membrane brought about by alkali boil (kiering), hypochlorite and peroxide bleaching, mercerization, acid hydrolysis, and dry heat are shown by means of microscopical examination of isolated pieces of the primary wall after exposure to these environments. 24 references.

Structure of jute hemicellulose.

P. C. Das Gupta and P. B. Sarkar (Indian Central Jute Committee). *(Letter to the editor). Textile Research J. 24:* 1071-1072 (December, 1954).

Moisture and strength relations of decorticated kenaf fabric.

W. Shepherd (Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia). *(Letter to the editor). Textile Research J. 24:* 1069-1071 (December, 1954).

Molecular properties of milkweed cellulose.

T. E. Timell and J. L. Snyder (McGill University). *Textile Research J. 25:* 870-874 (October, 1955).

This investigation was mostly concerned with the physical properties of the cellulose component of the common milkweed, i.e., its molecular weight and molecular-weight distribution. The hemicellulose portion was more closely studied. 18 references.

Some physical and chemical properties of Bimli and Mesta fibers and their use in differentiating them from jute.

D. B. Das, S. K. Guha, M. K. Mitra and J. F. Wareham. *J. Sci. and Ind. Research (India) 14B:* 407-412 (August, 1955).

Humidity correction for mass of jute fiber.

K. R. Sen. *Jute Bull. 18:* 102-103 (July, 1955).

A table of conversion factors for 65% R.H. is given.

Softening hard cuttings of jute with diammonium hydrogen phosphate.

P. K. Saha and S. K. Banerjee (Indian Central Jute Committee). *Fibres 16:* 352-359 (October, 1955).

The fundamentals of softening jute root cuttings with diammonium hydrogen phosphate have been studied, particularly with respect to (a) rise in temperature, (b) assimilation of nitrogen and phosphorus in diammonium hydrogen phosphate by micro-organisms, and (c) evolution of carbon dioxide during softening. 28 references.

Spun silk.

R. Traupel. *Ciba Rev. No. 111:* 4006-4035 (August, 1955).

The spun silk industry as an economic factor, p. 4006-4014, *Spun silk manufacture,* p. 4017-4024, *From floret silk spinning to the modern spun silk industry,* p. 4027-4035. References.

Practical textile chemistry of wool.

J. W. Bell. London, National Trade Press Ltd., 1955. 259 p. Through *BCIRA 35:* 643 (1955).

This practical textbook has special reference to the structure, properties, and processing of wool.

The effect of nutritional plane on wool follicle development in Cheviot lambs.

M. L. Ryder (Wool Industries Research Assoc.). *J. Textile Inst. 46:* T565-T575 (September, 1955).

Skin samples were taken at birth and at weaning from two groups of Cheviot lambs whose mothers were on different planes of nutrition during pregnancy and lactation. No significant difference was found in S/P ratio between the groups at either sampling time, showing that the diet of the mothers had not influenced the number of secondary follicles formed. However, S/P ratio at birth and S/P ratio at weaning were both correlated with body weight at birth, showing the importance of foetal environment for secondary follicle formation and final S/P ratio. 15 references.

On the bulk compression characteristics of wool fibers.

P. C. deMaCarty and J. H. Dusenbury (Textile Research Institute). *Textile Research J. 25:* 875-885 (October, 1955).

This paper describes a quantitative method for measuring the bulk compression of wool fibers, discusses the effect of varying experimental conditions on the test results and estimates the importance of the different parameters that may be derived from such measurements. 17 references.

Preparation and properties of a wool protein free of disulfide cross-links.

I. J. O'Donnell (Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia). *Textile Research J. 24:* 1058-1063 (December, 1954).

Modified wools have been prepared in which all the disulfide bonds have been severed by reduction and alkylation under conditions not conducive to peptide-bond rupture. The possibility of introducing strongly lyophilic groups into the wool proteins by this method was investigated. The solubility and other properties of -S carboxamidomethyl wool and extracts from it were studied. 17 references.

MAN-MADE FIBERS A 2

Chemical fiber index.

P. Lennox-Kerr. *Skinner's Silk and Rayon Record 29:* 1093-1099 (October, 1955).

An index to more than 600 man-made fibers, past and present, giving name, producer, and chemical grouping.

Chemistry and physics of Ardil.

R. Campbell. *Textile Mfr. 81:* 538-540 (October, 1955).

Blends of Orlon.

Fibres 16: 337-342 (October, 1955).

The properties of Orlon blended with wool, rayon, nylon and Dacron in varying proportions are described. Wash-and-wear performance is discussed. Some notes on Orlon's industrial applications are also included.

A multiple necking effect in nylon.

H. J. Woods (University of Leeds). *(Letter to the editor.). J. Textile Inst. 46:* T629-T630 (September, 1955).

A multiple necking effect in nylon.

D. C. Hookway (British Nylon Spinners Ltd). *(Letter to the editor). J. Textile Inst. 46:* T631 (September, 1955).

Polymer progress. Part 5. Polyamides.

J. A. Somers. *Man-Made Textiles 32:* 58-60 (October, 1955).

Man-made fibers data sheets: co-polymer fibers.

P. A. Koch. *Modern Textiles Mag. 36:* 51-54 (October, 1955).

Development, raw materials, properties, applications, patents, etc.. 43 references.

Fiber data sheets: polyacrylonitrile fibers.

P. A. Koch. *Fibres 16:* 314-315, 318-320 (September, 1955).

Manufacture, development, properties, products, applications, patents, etc. 65 references.

Directory of United States producers of man-made textile fibers.

Textile Organon: 144-148 (September, 1955).

Arranged by fiber. Lists executive offices, regional sales offices, trade names, and plants.

Industrial uses of artificial fibers. Part 3.

R. W. Moncrieff. *Fibres 16:* 301-304 (September, 1955).

In this, the concluding part, further uses are outlined, including those where weathering, nonflammability, shrinkability, solubility, lightness, shortness of staple and brittleness are desirable properties.

Man-made fiber data sheets: synthetic fibers.

P. A. Koch. *Modern Textiles Mag. 36:* 64-68 (September, 1955).

Tables of data on man-made fibers give information on patents, chemistry, manufacturers, properties, form of cross-section, etc. 42 references.

Man-made fibers, progress review and forecast, 1955-1956.

J. Campbell. *Modern Textiles Mag. 36:* 37-52 (September, 1955).

The economic and technical progress of rayon, acetate, nylon, the acrylics, the polyesters, metallics, Teflon, Saran, Vicara, and glass are discussed. Addresses are given for yarn producer sales offices.

Chemical engineering aspects of the synthetic fibers industry.

G. H. Fremon and R. L. Stultz (Carbide and Carbon Chemicals Co.). *Chem. Eng. Prog. 51:* 394-398 (September, 1955).

The purpose of this article is to review briefly the status of synthetic fibers from the point of view of the chemical industry and the chemical engineer and to discuss certain trends in textiles which appear to have tremendous significance for the chemical industry and the chemical profession. 3 references.

Polymer progress. Part 4. Polyesters.

J. A. Somers. *Man-Made Textiles 32:* 70-73 (September, 1955).

An explanation for the general reader of polyester polymer technology.

Fine structure in viscose fibers.

G. D. Joshi and J. M. Preston (University of Manchester). *Textile Research J. 24:* 971-979 (November, 1954).

A microscopical study. 31 references.

YARN PRODUCTION B

Enkalon staple in worsted yarn spinning.

H. Cuijpers. *Enka Breda Rayon Rev. (English ed.) 9:* 197-200 (September, 1955).

Some techniques for processing Enkalon staple and wool blends on the worsted system.

Spinning cotton and viscose blends on the cotton system.

B. J. Cheney and others. *Textile Mfr. 81:* 507-510 (October, 1955).

Picking, carding, drawing, and spinning are discussed.

Dynel on the cotton and American systems.

R. A. Lewis (Carbide and Carbon Chemicals Co.). *Textile World 105:* 104-106, 208-212 (October, 1955).

How to card and spin carpet rayon.

W. W. Bowman. *Modern Textiles Mag. 36:* 56-58, 62 (October, 1955).

Pre-conditioning of cotton waste.

E. Beswick. *Textile Wkly. 56:* 1163-1164 (October 14, 1955).

The economics and technical results of oiling by the spray method.

OPENING, PICKING, FIBER PREPARATION B 1

New technique for blending man-made fibers.

K. Quaas. *Melliand Textilber. 36, No. 8:* 772-773 (1955); *in German.* Through *BCIRA 35:* 664 (1955).

The process described consists in weighing the blend constituents in a specially constructed mixing device (a combination of the Bizerba balance and a tip truck holding 12-20 kg of the fibers) connected with a group of four hopper feeders whose mechanism is based on the principle of bed-mixing (adopted in carded-yarn spinning). Pre-opening of the individual constituents takes place separately, prior to mixing, by means of a cotton bale opener.

Whitin Model B Axi-Flo cleaner and opener.

Whitin Rev. 22: 41-43 (September-October, 1955).

CARDING AND COMBING B 2

Six steps to good card-flat care.

A. L. Landau. *Textile World 105:* 120-122, 218-220 (October, 1955).

Topics covered include flat chains, stripper comb, eccentric pulley, spiral brush, flat settings, and flat speeds.

How to set cards. Part 3.

P. C. Kochhar. *Textile World 105:* 114-117 (November, 1955).

Covers flats, doffers to cylinder, plates, and doffer comb.

High-capacity set of cards type 500.

G. Schlese. *Reyon, Zellwolle u. Chemiefasern No. 7:* 489-493 (1955); *in German.* Through *BCIRA 35:* 664 (1955).

Directions for new card constructions are followed by a technological description of the essential characteristics of the new Spinnbau set of cards, type 500. The machine, with maximum carding efficiency (without damaging the fibers) and productivity, is safe and easy to operate and adjustable for all fibers to be carded.

Noil control in cotton combing.

W. E. Morton. *Textile Bull. 81:* 79-82 (October, 1955).

The author tells how the Textile Department at Manchester School of Technology started with a purely academic interest in drafting waves and developed a research program which has resulted in a four to five per cent reduction in noils and a substantial increase in comber production.

Periodical irregularity of card slivers in cotton spinning.

W. Wegener and A. Ridder. *Textil-Praxis 10, No. 7:* 644-649 (1955); *in German.* Through *BCIRA 35:* 623 (1955).

The short-wave periodical irregularity of card slivers is greater with 9-inch cans and 9-inch can dish wheels than with 12-inch cans and 12-inch can dish wheels. Best results are obtained on slivers directly delivered into boxes. With increasing can content, the irregularity increases in a different measure, the steepest increase being observed in the last 1/3 content of the full can. The short-wave periodical irregularity depends neither upon the cotton mixture (or type of staple fiber) nor on the card sliver count. The irregularity, which is greater in staple fiber than in cotton, decreases after a 24-hour storage of the cotton (or staple fibers) by 0.1-0.9 per cent (according to the type of cans used). These results confirm the findings of Schmoller.

DRAWING AND ROVING B 3

On the fiber motion in the roller draft field. Part 3.

S. Ichino, H. Goto and S. Kurosaki. *J. Soc. Textile Cellulose Ind. Japan 11, No. 4:* 187-192 (1955); *in Japanese (English summary).* Through *BCIRA 35:* 624 (1955).

The experimental draft curve does not correspond with the theoretical result; to overcome this difficulty, the fiber motion is considered as two velocity groups (front and back rollers).

Drawing frame with divided sliver delivery.

O. von Grossmann. *Melliand Textilber. 56, No. 7:* 692-694 (1955); *in German.* Through *BCIRA 35:* 623 (1955).

The new Kruse draw-frame, model SBK 5 (constructed by Deutsche Spinnereimaschinenbau Ingolstadt) is described, whose characteristic innovation consists in imparting to the divided slivers a false twist as a result of which the slivers are strengthened and delivered into the can in a smooth condition.

Experiences with the W.S.T. single-zone draw-frame.

W. Stahlecker. *Tex 14, No. 7:* 968-969 (1955); *in Dutch.* Through *BCIRA 35:* 623

(1955).

Comparison is made between the single-zone W. S. T. draw-frame (with two roller pairs) and the modern three-roller draw-frames, and the advantages of the former are enumerated. The W. S. T. draw-frame (provided with ball-bearing pressure rollers) shows that, by using a sufficiently high load, the elimination of the tensioning-stretching zone has several advantages.

How to check roving-frame adjustments.

N. H. Pomfret. *Textile World 105:* 128-129, 230 (October, 1955).

The effect of drafting on the regularity of rovings and yarns.

K. Blaschke. *Textil-Praxis 10, No. 7:* 652-657 (1955); *in German.* Through *BCIRA 35:* 623 (1955).

The effects of the roller positions and of intermediate drafts were investigated on staple-fiber and cotton slivers. All diagrams and the number of yarn breakages point to the advantages of using high-draft speed frames.

Leveling effect of drafting.

M. Tabata and S. Ishikawa. *J. Soc. Textile Cellulose Ind. Japan 11, No. 4:* 181-186 (1955); *in Japanese (English summary).* Through *BCIRA 35:* 623 (1955)

The leveling effect of ideal drafting is discussed theoretically.

Examination of the drafting processes on drawing systems of various spinning machines. Part 2. Report: Determination of the adhesion and slipping properties of slivers and rovings.

H. Stein. *Forschungsber. Wirtschaft - u. Verkehrsministeriums Nordrhein-Westfalen No. 97:* 1-84 (1955); *in German.* Through *BCIRA 35:* 399 (1955).

New testing methods and devices for determining the adhesion, and slipping properties of slivers and rovings are described. Special attention is given to comparative tests on various man-made fibers which frequently differ considerably in their properties. It is shown that the newly developed methods give information with respect to the processes taking place during tensioning and drafting and, in particular, determine and register in the form of diagrams alternate adhesion and slipping (intermittent drafts). Examples are given to indicate the manner in which the adhesion-slipping (stick-slip) characteristics change during processing and to point out the valuable data that can be obtained from the plotted spinning-passage curve on the processing possibilities of the individual fibers. As the strengthening of the roving by twisting cannot be determined without suitable devices, the provision of an accurate measuring method appears particularly desirable. The effects of staple, count and surface characteristics of the fibers, and of finishing and impregnating agents and washing and dyeing processes are also discussed.

SPINNING, WINDING, TWISTING B 4

How to correct bad spinning practices.

M. C. Gross. *Textile World 105:* 112-113, 192-194 (November, 1955).

Numerous causes of bad spinning are cited. With careful supervision they can be prevented.

Some problems of the shape and tension of the thread in the spinning balloon.

L. N. Ginzburg. *Tekstil. Prom. 15, No. 6:* 23-25 (1955); *in Russian.* Through *BCIRA 35:* 665 (1955).

For studying the shape of the thread balloon, the author developed a photographic method with a flash exposure of 10^{-5} seconds. The shape of the three-dimensional curve obtained indicates the effect of the Coriolis forces. On examining more closely the thread in the balloon under the action of centrifugal forces only, the curve formed by the thread is found to approach the elliptical sine function of the amplitude or even the ordinary circular sine function. The periodic character of these functions indicates that the half-period can be greater or smaller than the height of the balloon. By means of the flash-photographic method it was possible to determine the shape of the thread in a double balloon, which approached a sine-curve with a half-period smaller than the height of the balloon. Experiments have confirmed the assumption that, when the balloon tension decreases (after the critical point), the balloon diameter no longer increases, but the balloon is divided into two (i.e. necked). If, according to drag conditions (bobbin, traveler), the thread tension is small, then, especially at a great height of the balloon, a double or multiple balloon is formed, in which the tension is equal at all points of the thread intersecting with the pivot axis and at the top point (thread guide). The minimum tension in a double balloon is approximately half that of the ordinary balloon. Simultaneously with the decrease in tension, a certain increase in thread length may occur. During swelling of the double balloon, one balloon tends to dilate at the expense of the other, whose size decreases and in which the tension increases. The radii of the double balloons are generally considerably smaller and the centrifugal force of the single mass is only small. Thus, multiple balloons are subjected

considerably less to deformation during swelling than the ordinary balloons.

The ballooning thread apparatus.

J. Gregory, C. Mack and E. J. L. Smart (British Cotton Ind. Research Assoc.). *J. Textile Inst. 46:* T606-T613 (September, 1955); *Shirley Inst. Mem. 28:* 207-214 (June, 1955).

A description of an apparatus for measuring balloon characteristics is given here together with the use to which it has been put in measuring the air-drag of textile yarns and certain coefficients of friction. 8 references.

Measurements of balloon characteristics.

J. Gregory, C. Mack and E. J. L. Smart (British Cotton Ind. Research Assoc.). *J. Textile Inst. 46:* T614-T626 (September, 1955); *Shirley Inst. Mem. 28:* 215-227 (June, 1955).

The results of measurements made on balloons of varying sizes formed by rotating yarns of different textile materials are given here. It is shown that the results compare well with calculations from the theory given by one of the authors. 6 references.

Influence of friction and traveler weight in ring spinning.

J. Crank and D. D. Whitmore (Courtaulds Ltd). *Textile Research J. 24:* 1006-1010 (November, 1954).

The authors examine the way that the shape and tension of the ballooning thread in a ring spinning system are influenced by technical features such as the dimensions of the spinning frame and the properties of the yarn. The variables examined are traveler weight, friction between the traveler and the ring, friction between the traveler and the yarn, and bobbin speed.

Features and adaptability of the woolen ringframe. Part 5.

J. A. B. Mitchell. *Textile Mfr. 81:* 472-474 (September, 1955).

A review of the detail developments in twister-tubes from early models to modern frames, including an explanation of the effects of coiling and slippage of the yarn over the spindle point.

A thread lamp for ring spinning frames.

O. Reinhardt. *Textil-Praxis (English ed.) No. 3:* 105-108 (September, 1955).

The purpose of the Meiner's-thread lamp is to illuminate the thread running off from the front roller on its way along the full row of spindles up to the thread guide, so that any interruption in the running of the thread and any gap occurring on the breakage of an end will be noticed more easily.

End breakages in worsted spinning. Part 7.

P. P. Townend and L. T. Yu. *Textile Recorder 73:* 61-62 (October, 1955).

The authors discuss the effect of different cap and bobbin sizes.

End breakages in worsted spinning. Part 8.

P. P. Townend and L. T. Yu. *Textile Recorder 73:* 56-59 (November, 1955).

This article describes a number of experiments carried out on a ring spinning frame for comparison with those on a cap frame described in an earlier article. A brief summary reviews the purpose and findings of the series.

Rewinding synthetic yarns for knitting.

Schweiter Ltd. *Textile Wkly. 56:* 1195-1196 (October 14, 1955).

The new precision cross-winding machine, Type KEK-PN Monofil Coner, for rewinding synthetic yarns on to pineapple cones is described.

Downtwisting du Pont zero twist acetate.

E. I. du Pont de Nemours and Co., Inc. Wilmington, Del., 1955. 24 p. Bulletin A-23. Free.

Whitin Spoolmatic redraw doubler.

Whitin Rev. 22: 2-19 (September-October, 1955).

This new and economical method of uptwisting multiple ply yarns is described and illustrated. Photographs, diagrams, flow charts.

YARNS B 5

The tensile properties of man-made and synthetic staple yarns.

G. Susich and E. T. Vadala (U. S. Quartermaster Research and Development Center). *Textile Research J. 25:* 817-832 (October, 1955).

The stress-strain properties, the tensile-recovery behavior, and the response to repeated tensioning (cycling) of sixteen staple yarns were investigated. Three man-made (Fiberglas, viscose, acetate) and seven synthetic (nylon, Orlon, Dacron, Dynel, Saran, polyvinyl chloride, Kuralon) textile materials were tested at standard conditions using the Instron Tensile Tester. 12 references.

Modified filament yarns. Part 3. Bulk and stretch in new forms.

Man-Made Textiles 32: 56-57 (October, 1955).

Ban-Lon yarns, which are crimped filament

types based on the stuffer box principle, are discussed.

Elastic and voluminous yarns.

J. C. Meijberg. *Enka Breda Rayon Rev. (English ed.) 9:* 161-165 (September, 1955).

A brief survey of lively yarns, crimped yarns, and loop yarns.

Review of metallic yarns.

Textile Organon 26: 160-162 (October, 1955).

A brief review of the types of metallic yarns, yarn sizes and prices, and end-uses. A list of manufacturers and trade names is given.

The production of twists and crimps in synthetic yarns.

J. Dariel. *Industrie Textile:* 95-97 (February, 1955); *in French.* Through *BCIRA 35:* 666 (1955).

Two processes are described for the production of crimped yarns from synthetic fibers. In one, two filaments or threads are allowed to pass over a twisting spindle imparting to each of them a false twist, the deformation being fixed permanently in the setting device. The two threads can be wound either separately on two bobbins or together on the same bobbin. In order to improve the quality of the yarn, the two threads may be passed through a medium comprising a swelling agent before setting. The second process mentioned (developed by I.C.I.) consists in allowing the filaments to twist around their own longitudinal axis while they pass, under tension, over a deformation edge. The crimping process can be effected either before or after drawing.

Hand book of twisting. Chapter 6. Part 2. Effect of twist on product life.

N. Truslow. *Textile Bull. 81:* 106-111 (October, 1955).

The minimum twist necessary for fiber cohesion and its role in the spinning process.

A. Barella. *Industrie Textile:* 87-90 (February, 1955); *in French.* Through *BCIRA 35:* 665 (1955).

The method described makes it possible to determine the minimum twist for cohesion, and to obtain valuable data, such as the upper limit of twist which can be applied during the preparatory processes preceding the actual spinning, so as to avoid such disadvantages as faults and irregularities which excessive twist in the roving can produce in the yarn. The theories advanced appear to be applicable to all the fibers tested. The effect of fiber length on the minimum twist for cohesion is pointed out.

Investigation for determining the optimum degree of twist in multifilament Perlon stocking yarn.

G. Edelmann and H. Dittrich. *Textil- u. Faserstofftech. 5, No. 7:* 425-429 (1955); *in* German. Through *BCIRA 35:* 665 (1955).

Large-scale experiments were carried out in order to determine the optimum degree of twist (number of twists per m) for Perlon stocking-yarn Nm 200/12 and Nm 150/16 (welt material). On examining the technological properties of the yarn and of the knitted product, and the relationship between snag-resistance and wearing properties of the stockings and the degree of twist, it was found that several technological properties of the yarn and finished product can be influenced by the degree of twist in the yarn.

The arrangement of fibers in single yarns.

W. E. Morton (University of Manchester). *Textile Merc. 133:* 407-410 (September 2, 1955); 463-465 (September 9, 1955).

This paper deals with the structure of ring spun yarns in reference to the phenomenon of fiber migration. The method of analysis used in conjunction with the tracer fiber technique is described, and suitable parameters for characterizing the migratory behavior of fibers are discussed. Evidence of the effect of twist on the rate of migration is given in support of the contention that fiber arrangement is not merely one of random tangle; and experiments are described which throw light on the part played by the positions occupied by the fibers in the ribbon of drafted roving presented for twisting.

Stress-strain relationships in yarns subjected to rapid impact loading. Part 3. Effect of wave propagation.

J. C. Smith, F. L. McCrackin, and H. F. Schiefer. *J. Research Nat. Bur. Standards 55:* 19-28 (July, 1955).

The tensile behavior of a Hookean material, elongated by rapid impact at one end has been calculated, using a theory in which wave propagation is considered. As a result of these calculations, limits have been established on the applicability of a simpler theory, discussed in a preceding publication, in which wave propagation was neglected.

Investigations into the fiber arrangement in the yarn cross section of some fiber blends.

L. Rudolph. *Textil- u. Faserstofftech. 5, No. 5:* 293-300 (1955); *in German.* Through *BCIRA 35:* 572 (1955).

According to views expressed in the litera-

ture, the shorter and finer fiber migrates towards the center of the yarn during spinning of mixed yarns from fibers differing in staple and fineness, and the coarser and longer fibers determine the nature of the spun product. If these views were confirmed, it would be possible to affect the properties of the yarn (feel, appearance, dyeing properties, etc.) by selecting suitable filament deniers and staple lengths for spinning yarn blends from natural and synthetic fibers. The results of the microscopical study carried out on wool-viscose and Wolcrylon-viscose under normal spinning conditions have shown no preferential fiber distribution in the cross section of worsted-type yarns.

Wool carding attachment for producing novelty effects.

S. E. Ziak. *Textile Ind. 119:* 118-120 (October, 1955).

Simple attachment for wool cards which can be made in the most modest mill machine shop is described. Rovings for single novelty yarns such as flake or splash and nub or knicker yarns may be manufactured with it. From these yarns and other ordinary yarns ply novelty yarns of several types can be made at the twister. Diagram.

Orientation concerning the relations between fiber and yarn properties in several mills.

J. W. van Dalfsen and J. C. A. Zaat (Fiber Research Institute T.N.O.). *(Letter to the editor). Textile Research J. 24:* 1003-1004 (November, 1954).

Abrasion resistance of multifilament and staple yarns tested on modified Walker Abrader.

E. Abrams and H. P. Whitten (Southern Research Institute). *Textile Research J. 24:* 980-989 (November, 1954).

Nine multifilament yarns and 18 staple yarns were tested on a modified Walker Abrader using the same low tension for all yarns.

FABRIC PRODUCTION C

Report of discussions of questions on slashing, weaving and maintenance.

Textile Operating Executives of Georgia. Atlanta, Ga., 1955. 17 p.

WARPING, SLASHING, YARN PREPARATION C 1

New creel saves space.

Crowther Ltd. *Textile Wkly. 56:* 1039-1040 (September 30, 1955).

A new creel of revolutionary design requiring about 50% less floor space than ordinary magazine creels.

Processing of Ardil. Part 3. Sizing of Ardil fiber/cellulosic warps.

Imperial Chemical Industries Ltd. *Textile Merc. 133:* 735 (October 21, 1955).

Winding and yarn tension during warp sizing.

K. Ramaszeder. *Textile Mfr. 81:* 524-529 (October, 1955).

The author contends that the production of good warp beams for high speed looms is better assured by automatic winding speed regulation than by friction clutch regulation, and explains why dressing and sizing machines should be equipped with this modern improvement.

Effect of the air and water vapor content, respectively, on the drying of fabrics and warps.

Ruti Maschinenfabrik. *Rev. Textile 54, No. 6:* 303-306 (1955); *in French.* Through *BCIRA 35:* 669 (1955).

Results are reported from a study on the drying behavior of fabrics and sized warps according to the proportions of air and water vapor in the drying medium, and reference is made to a new sizing machine developed by Ruti (type LSMA) fitted with the Artos drier, in which the drying medium is vertically projected at relatively low speed on to both surfaces of the warp simultaneously. The warp threads pass through the drying chamber between two air cushions without touching any material and, therefore, without friction. In consequence, the tension of the warp can be reduced to a minimum and the elongation of the thread maintained at less than 1 per cent.

Rayon warp preparation from a new angle.

G. Schonemann. *Textil-Praxis (English ed.) No. 3:* 114-120 (September, 1955).

Modern German warping machinery is described, discussing where sources of trouble may develop and how such trouble can be eliminated, especially in sizing operations.

Modern warping technique.

M. Leval. *Industrie Textile:* 105-107 (February, 1955); *in French.* Through *BCIRA 35:* 668 (1955).

The new warper and creel, developed by the Etablissements Cornard et Cie, are described and illustrated.

Elimination of yarn friction during winding.

A. Pierron. *Industrie Textile:* 99-101 (February, 1955); *in French.* Through *BCIRA 35:* 667 (1955).

In the guiding device described (developed by Stenglein) the thread is conveyed by the guiding edge of two rotably mounted guiding bodies, whose axes of rotation intersect in one point and whose guiding edges form, during the rotatory movement of the bodies, a slit for the passing thread. The guiding device stops when the thread breaks or if the bobbin is empty.

History of winding and warping. Part 4. Early cotton winding machines.

W. English. *Textile Recorder 73:* 63-65 (October, 1955).

WEAVING C 2

The preparation and weaving of man-made fibers and blended yarns.

G. Turton and K. Greenwood. *Textile Wkly. 55:* 1190-1192, 1194 (April 22, 1955); 1292, 1294-1296 (April 29, 1955); 1375-1379 (May 6, 1955). Through *BCIRA 35:* 487 (1955).

In their comprehensive discussion the authors deal in turn with the weaver's beam, healds and reeds, the weft package, the loom, shedding, lease rods and warp stop motion, warp and weft tension, pickspacing, and blended yarns. Reference is made throughout to relevant studies that are being made by the British Rayon Research Association.

The maintenance of cloth width during weaving.

R. Landon. *Industrie Textile:* 108-109 (February, 1955); *in French.* Through *BCIRA 35:* 670 (1955).

A device is described (developed by Bechter) by means of which it is possible to stretch the fabric in the weft direction and which can be adapted to different fabrics woven on the same loom.

The Schonherr Buckskin loom. Part 2.

A. Lang. *Textil-Praxis 10, No. 7:* 664-670 (1955); *in German.* Through *BCIRA 35:* 628 (1955).

The general fittings of the light Hodgson loom find their application in the buckskin loom. In this part, the author describes these components individually.

Jacquard shedding and harness mounting.

J. Starkie. *Textile Mfr. 81:* 534-537 (October, 1955).

Double-face carpet weaving. Part 2. The jacquard loom.

A. Crossland. *Textile Recorder 73:* 54-58 (October, 1955).

An account of the technique of double-face Wilton weaving on the jacquard loom with a description of the jacquards used in conjunction with the Wilson and Longbottom loom.

Studies on the weaving operations. Part 1. A dynamical research on the interlacing phenomena between the warp and weft yarns.

E. Kuze, T. Sakai and M. Mihara. *J. Soc. Textile Cellulose Ind. Japan 11, No. 4:* 192-201 (1955); *in Japanese (English summary).* Through *BCIRA 35:* 628 (1955).

The behavior of the warp and weft yarns during beating-up is discussed theoretically.

How to determine workloads for weavers.

D. H. Denholm (Chase Bag Co.). *Textile World 105:* 125-126 (November, 1955).

The system, called modular times, gives workloads quickly even when conditions, equipment, and fabrics woven vary.

Dynamic yarn-break test predicts weaving performance.

E. Maier. *Textile World 105:* 118, 202 (November, 1955).

A tester constructed to duplicate the stresses of weaving predicts weaving performance of warp yarns better than the standard break test. An index of break values, based on experience, can be used as a guide to weavability.

Study of weaving mechanisms with modified stroboscope. Part 1.

D. C. Snowden and P. Melchior (Leeds University). *Man-Made Textiles 32:* 52-56 (October, 1955).

The aim of the work undertaken by the authors was to determine the scope of the Stroboloom from the point of view of studying shuttle movement, the action of the warp let-off mechanism, etc., and particularly to make photographic records of any interesting things observed. 6 references.

The weaving of filament yarns on high-speed automatic looms.

A. Trifunovic. *Enka Breda Rayon Rev. (English ed.) 9:* 166-175 (September, 1955).

Weaving defects are considered in detail and particular attention is paid to the picking mechanism and automatic stop motions.

How to reduce set marks.

R. B. Pressley. *Textile World 105:* 93-97 (November, 1955).

Three mills weaving satins, taffetas, and dope-dyed fabrics tell what causes set marks and what they are doing to reduce them.

KNITTING C 3

New fibers and their merits as stocking yarns.

D. Starkie. *Textile Mfr. 81:* 511-512 (October, 1955).

Requirements for high quality hosiery and problems in hosiery manufacture are discussed.

FABRICS C 4

Terylene/wool blends.

Textile Merc. 133: 585-586 (September 30, 1955).

Construction of worsted-type fabrics containing Terylene staple fibers.

The processing of Ardil. Part 2. Ardil/cellulosic fiber blends.

Textile Merc. 133: 672-673 (October 14, 1955).

The construction and finishing of dimensionally stable fabrics.

Idea fabrics.

G. H. Kester. *Du Pont Mag. 49:* 2-6 (October-November, 1955).

Fabrics developed by du Pont designers using du Pont fibers.

Design in woven structure. Part 35. Basket twill weaves.

D. C. Snowden. *Wool Rev. 27:* 31-33 (October, 1955).

Grading denim to standards.

G. Sanders. *Textile World 105:* 132-133 (November, 1955).

A new grading system based on a written manual.

The effect of difference of moisture in spun rayon yarn upon the appearance of fabrics manufactured from them.

H. Cuijpers. *Enka Breda Rayon Rev. (English ed.) 9:* 176-179 (September, 1955).

Stripiness in spun rayon fabrics is sometimes due to differences in moisture during the preparatory stages of manufacture.

Mechanics of elastic performance of textile materials. Part 12. Relation of certain geometric factors to the tear strength of woven fabrics.

N. A. Teixeira, M. M. Platt and W. J. Hamburger (Fabric Research Laboratories, Inc.). *Textile Research J. 25:* 838-861 (October, 1955).

Tongue-tear tests were made on samples of acetate fabrics, varying certain controlled factors: weave, texture, yarn twist, and yarn structure. An analysis of the resulting experimental data showed certain relationships between these fabric factors and tear strength. A qualitative discussion was made of tearing action—the influence on tear strength of various types of fabric distortion at or near the tear such as yarn pull-out force, crimp, cover factors, and dimensional stability in the plane of the fabric. Then the relationships between these types of distortion and the variable fabric factors were examined. The actual mechanism of tear in the tongue-tear-test was theoretically investigated from the nature of the frequency distribution of load drops through the geometry of the tear structure to the synthesis of the tear diagram. Then the effects of the tails and the untorn fabric were studied; finally, all components were studied together. 5 references.

The effect of the direction of yarn twist and twill on the properties of woven cloth.

H. W. Best-Gordon (Courtaulds Ltd). *(Letter to the editor). J. Textile Inst. 46:* T627-T629 (September, 1955).

Air permeability of parachute cloths.

H. W. S. La Vier and W. C. Boteler. Wright-Patterson Air Force Base, Ohio, Wright Air Development Center, 1955. 68 p. WADC Technical Report 52-283. Part 5.

Terry towel construction and pattern developments.

T. Hargreaves. *Textile Mfr. 81:* 465-467 (September, 1955).

The geometry of a plain knitted loop.

G. A. V. Leaf and A. Glaskin (Hosiery and Allied Trades Research Assoc.). *J. Textile Inst. 46:* T587-T605 (September, 1955).

This paper presents a geometrical model of a plain knitted loop as a basis for a mathematical description of the dimensional properties of a plain knitted fabric. 9 references.

Graphical relationships in cloth geometry for plain, twill, and sateen weaves.

L. Love (Quartermaster Research and Development Laboratories). *Textile Research J. 24:* 1073-1083 (December, 1954).

An extension of Peirce's consideration of the maximum weavability of plain weaves. Based

on his own observations of fabric cross sections, the author establishes lateral compression factors for other than plain weaves. He combines these with appropriate weave factors to arrive at graphical relationships for maximum weavability presented here in a form of immediate use to the mill designer.

Practical loom experience on weavability limits.

J. B. Dickson (United States Rubber Co.). *Textile Research J. 24:* 1083-1093 (December, 1954).

The author reports on numerous loom tests which serve to illustrate the validity of Love's (see above) assumptions, analysis and computations.

Preparation and uses of chenille yarns.

H. Hennig. *Textil- u. Faserstofftech. 5, No. 6:* 371-374 (1955); *in German.* Through *BCIRA 35:* 597 (1955).

The production of woven chenilles and twisted chenilles is described and their uses are enumerated. Samples of various fancy chenilles are shown.

Production and use of chenille.

F. Strecker. *Textil-Praxis 10, No. 5:* 446-448 (1955); *in German.* Through *BCIRA 35:* 563 (1955).

The structure of chenille, the machines on which it is made, and its uses are discussed.

Supertwist of nylon filament and increased abrasion resistance of the fabric.

L. Frider. *Industrie Textile:* 357-359 (May, 1955); *in French.* Through *BCIRA 35:* 564 (1955).

Experiments have shown that fabrics made from 210 denier nylon yarn, to which a twist of at least 8 turns per 25 mm (preferably 18-20 turns per 25 mm) has been imparted before weaving, show considerably increased abrasion resistance even to continuous stresses applied for long periods. The increased stiffness of these fabrics can be eliminated by heat treatment at about 176°C, without loss in abrasion resistance or other adverse effects.

Day-to-day problems in the hatting industry.

A. Baines and D. Haigh. *J. Textile Inst. 46:* P630-P648 (September, 1955).

In a survey, illustrated by examples of the types of problem encountered in the manufacture and trimming of hats, the hatting industry is shown to be closely connected with several sections of the textile industry. The important part played by some of these investigations in helping to reach the objectives of the fundamental research program of the British Hat and Allied Feltmakers Research Association is discussed. 49 references.

The thermal insulation of caribou pelts.

I. Moote. *Textile Research J. 25:* 832-837 (October, 1955).

The thermal insulation of samples of three caribou pelts, six other pelts, and one pile fabric was measured in still air and in winds up to about 26 mph. In still air the values, including ambient air layer, ranged from 2.0 clos for the pile fabric to 5.4 clos for the winter caribou. In a 25-mph wind the insulation afforded by most of the samples dropped to about 50% of the still-air value; notable exceptions were winter caribou, which dropped to only 58%, and winter deer, which dropped as low as 38%. 10 references.

FINISHING AND CHEMICAL PROCESSING D

Felts for sanforizing machines and felt calenders.

O. Innemann. *Textil-Praxis (English ed.) No. 3:* 128-130 (September, 1955).

Selection and care of felts.

A broad view of textile processing in Europe and the United States.

R. W. Jacoby. *Am. Dyestuff Reptr. 44:* P754-P760 (October 24, 1955).

In an after-dinner address, the author presented a humorous review of textile processing in Europe and the United States illustrated with personal experiences, reminiscences, and samples.

Measuring launderability of finishes: a new approach.

H. Cohen. *Modern Textiles Mag. 36:* 69-72 (October, 1955).

Commercial laundering and dry cleaning problems with fabric finishes.

Compressive shrinkage blankets.

R. B. Neville. *Textile Age 19:* 18-22 (November, 1955).

Handling, installation and care of blanket for a successful preshrinking operation.

Basic chemistry of textile preparation.

S. R. Cockett and K. A. Hilton. London, National Trade Press Ltd, 1955. 197 p. Through *BCIRA 35:* 631 (1955).

This textbook deals briefly with fiber structure, chemistry and properties, with wetting and detergency, mercerization, chlorination, milling, carbonizing, crepeing and bleaching, and with defects and testing.

CHEMICAL PROCESSES D 1

Uvitex U, optical brightener for Dacron and Terylene.

Ciba Rev. No. 111: 4037-4039 (August, 1955).

Continuous bleaching of cottons with silicate-free peroxide solutions.

P. Feldman and B. K. Easton. *Am. Dyestuff Reptr. 44:* P745-P748 (October 24, 1955).

The authors show in this paper how phosphates can be used instead of silicates to formulate stabilized peroxide solutions that do not cause scale deposits. Practical application of these solutions for the continuous bleaching of cottons is described as well as much of the experimental work which formed the basis of this development.

Open width bleaching with sodium chlorite.

W. Hundt. *Textil-Praxis (English ed.) No. 3:* 142-144 (September, 1955).

Historical notes on the wet-processing industry. Part 9. Two Scottish physicians and the bleaching industry: the contributions of Home and Black.

S. M. Edelstein. *Am. Dyestuff Reptr. 44:* 681-684 (September 26, 1955).

Carbonizing woolen piecegoods. Part 1.

Textile Recorder 73: 59-61 (October, 1955).

Some scientific and practical aspects.

Carbonizing woolen piecegoods. Part 2.

Textile Recorder 73: 59-61 (November, 1955).

A description of the various methods of acid removal and the advantages and disadvantages of the different carbonizing processes.

Synthetic detergents in wool processing.

Textile Mfr. 81: 458-461 (September, 1955).

Review. 11 references.

Selectivity factor—its influence on padding.

C. P. Riley (Lowell Technological Institute). *Am. Dyestuff Reptr. 44:* P733-P736 (October 10, 1955).

A method for the determination of preferential sorption effects of fabrics in pad baths of finishing agents was devised. This method involved the use of the ratio of the amount of finishing agent actually deposited on the fabric to the amount that theoretically should have been deposited in the padding operation. This ratio was called the "selectivity factor." It was found that the selectivity factor is a function of the agent in question, the nature of the agent, and the manner in which the fabric is padded with the agent. 3 references.

Molecular bonding: modern aid to finishing processes. Part 2.

A. J. Hall. *Fibres 16:* 343-347 (October, 1955).

The author discusses the isocyanates, organosilicone compounds and halogenated compounds.

Flame resistance of military textiles.

A. J. McQuade (Quartermaster Research and Development Command). *Am. Dyestuff Reptr. 44:* P749-P751 (October 24, 1955).

Work on brominated triallyl phosphate and further new compounds.

Non-woven rubber bonded fabrics. Part 1. Pilot plant production.

S. C. Stokes and A. R. Walker. *Textile Merc. 133:* 761-763 (October 28, 1955).

Development work carried out by Rubber Technical Developments Ltd.

Non-woven rubber bonded fabrics. Part 2. Continuous batt formation using one carding engine.

D. Wilson. *Textile Merc. 133:* 763-764 (October 28, 1955).

Uses of amino-resins in textile finishing.

A. R. Smith. *Textile Mfr. 81:* 482-488 (September, 1955).

This paper considers the chemistry of such products and the methods of preparing stable precondensates suitable for textile applications. Recent developments of other types of amino-resins are discussed and the practical application of resins to fabrics reviewed. 29 references.

Resin finishing of native cellulose.

W. Rotta and R. Allscher. *Textil-Praxis (English ed.) No. 3:* 123-127 (September, 1955).

See *TTD 12:* 250 (June, 1955).

Mechanism of imparting wrinkle recovery to cellulosic fabrics.

T. F. Cooke, J. H. Dusenbury, R. H. Kienle and E. E. Lineken (American Cyanamid Co.). *Textile Research J. 24:* 1015-1036 (December, 1954).

A mechanism for explaining how wrinkle recovery is imparted to cellulosic fabrics by means of melamine and urea formaldehyde is advanced. 24 references.

Wool-scouring procedures.

H. C. Borghetty (Rohm and Haas Co.). *Am. Dyestuff Reptr. 44:* P726-P729 (October 10, 1955).

The author discusses mechanical equipment, scouring procedures, and detergent solutions, with special emphasis on the use of synthetic detergents, alkali, acid, continuous methods, counterflow principles, the recovery of by-products, and economy. 5 references.

Chlorination of wool.

R. E. Weber, Jr. *Textile World 105:* 126, 226, 230 (October, 1955).

Formulas and procedures that reduce felting and produce wool that will dye evenly.

DYEING AND PRINTING D 2

Panel discussion of dyeing and finishing.

Am. Dyestuff Reptr. 44: P730-P732,P736 (October 10, 1955).

Questions and answers.

Simultaneous dyeing and twist-setting of nylon frieze carpet yarn in a rawstock machine.

Du Pont Tech. Bull. 11: 122-125 (September, 1955).

Dyeing of cyanoethylated cotton.

H. A. Schuyten and J. W. Weaver (Southern Regional Research Laboratory). *(Letter to the editor). Textile Research J. 24:* 1005 (November, 1954).

The dyeing of Terylene polyester fiber with disperse dyes above 100° C.

A. S. Fern (Imperial Chemical Industries). *J. Soc. Dyers Colourists 71:* 502-513 (September, 1955).

The stability, dyeing, and fastness properties of a range of disperse dyes have been studied on Terylene polyester fiber at temperatures up to 120°C. under laboratory conditions. The potential advantages and disadvantages of dyeing under such conditions on the large scale are pointed out. 22 references.

Dyeing polyacrylonitrile fibers with Deorlene colors.

H. Stern. *Ciba Rev. No. 111:* 4039-4040 (August, 1955).

Dyeing Arnel cellulose triacetate fiber.

Du Pont Tech. Bull. 11: 115-121 (September, 1955).

Recommendations for use of Du Pont dyes on Arnel. Consideration has been given to fastness of the dyes to destructive influences such as sublimation, washing and light.

Dyeing yarn composed of 65% Dacron polyester fiber and 35% cotton.

Du Pont Tech. Bull. 11: 111-114 (September, 1955).

Recommended methods for yarn preparation and dye application as well as a number of formulations for various shades.

Dyeing of nylon and perlon crimp yarn.

Textil-Praxis (English ed.) No. 3: 137-141 (September, 1955).

Improved process for dyeing nylon fabrics with acid dyes.

J. A. Brooks and J. E. Reith (E. I. du Pont de Nemours and Co., Inc.). *Am. Dyestuff Reptr. 44:* P698-P701 (September 26, 1955).

This paper describes how acid dyes can be applied levelly and with good coverage by a modified technique at 235-250°F in the presence of 2% Duponol D Paste owf. 5 references.

White discharge printing.

Modern Textiles Mag. 36: 48-50, 66 (October, 1955).

Notes on ways to insure high grade results in white discharge printing on dyed grounds.

Ultrasonic tanning and dyeing.

F. Gutmann. *J. British Inst. Radio Engineers 15, No. 7:* 357-364 (1955). Through *BCIRA 35:* 633 (1955).

Ultrasonic tanning and dyeing experiments are reviewed. The similarities and dissimilarities of both processes are discussed in the light of the physico-chemical processes involved. The increase in ultrasonic power required for large-scale industrial employment is estimated. Since these power requirements cannot be met by crystal transducers, it is suggested that the operating frequency be reduced to the higher sonic or low ultrasonic range in order to permit the use of magnetostrictive devices. The relative effectiveness of sound at high and low frequencies is discussed. Some sources of high ultrasonic power are described.

DRYING D 4

Electric-eye system prevents cloth damage.

G. A. Estabrook. *Textile World 105:* 118-119 (October, 1955).

To eliminate a source of damage to expensive mechanical cloths, the Albany Felt Co. developed

an electric-eye control system for its dryer-singer range. If the cloth drifts off toward the edge of the drying cylinders, the range is automatically stopped before damage can occur.

Stabilization of structures made from polyester fibers.

D. N. Marvin and P. W. Carlene. *Textile Mfr. 81:* 492-494 (September, 1955).

Terylene fabrics can be set at one of three stages (a) before scouring, (b) after scouring or (c) after scouring and dyeing.

TESTING AND MEASUREMENT E

Using statistical methods in development work.

M. Romer (James Lee & Sons Co.). *Modern Textiles Mag. 36:* 32, 40 (November, 1955).

Presents statistical "t" tests for evaluation of significance of difference between percentages and between sample averages in experimental work.

Textile microtechnique.

S. M. Charlett. *Fibres 16:* 365-367 (October, 1955).

This paper outlines some methods that may be employed to make *permanent* microscopical preparations of fibers, and some for the *temporary* mounting of fibers for quick examination. 8 references.

The Swiss projection microscope Megascope. A new textile testing apparatus.

R. Knobel. *SVF Fachorgan Textilveredlung 10, No. 6:* 286-292 (1955); *in German.* Through *BCIRA 35:* 640 (1955).

The Megascope is an optical apparatus which can be used as projector, microscope and photo-apparatus for macro- and micro-photography. Its magnification range is between 7.5 and 800x. The apparatus is especially suitable for the identification of fibers, counting of fibrils, polarization, and measurement of fibers, and for quality control in spinning and doubling, weaving and finishing. It is produced by Hans Kloti, Zurich.

Technical temperature registration. Part 2. Static errors of registration.

C. G. Booy. *Enka Breda Rayon Rev. (English ed.) 9:* 192-196 (September, 1955).

FIBERS E 1

Microwave dielectric measurements on single fibers.

J. J. Windle and T. M. Shaw. *Textile Research J. 25:* 865-870 (October, 1955).

Microwave techniques which have proved successful at frequencies of 3,000 and 9,300 Mc for the determination of the complex dielectric constant of fiber bundles have been extended to include a frequency of 26,000 Mc, where for the first time measurements on a single wool fiber have proved to be feasible. Such measurements make it possible to compare directly the results of electrical and mechanical measurements on the same single fiber. In addition, the single-fiber technique has provided a convenient, rapid, and nondestructive method for the determination of the average mass of adjacent 1-cm sections of the fiber along its length. Variations as large as two-fold in mass per unit length are sometimes encountered within a single wool fiber. The occurrence of these variations and their effect upon mechanical measurements are discussed. 7 references.

Botanical studies in cotton quality. Part 2. A simple air-flow method for measuring cotton fineness and maturity.

J. P. Evenson. *Empire Cotton Growing Rev. 32:* 251-255 (October, 1955).

Micronaire-fineness and Causticaire-maturity relationships.

G. Raes and T. Fransen (Laboratorium de Meulemeester, Belgium). *(Letter to the editor). Textile Research J. 24:* 1000-1001 (November, 1954).

The evaluation of results obtained on available types of fiber strength testers using various gauge spacings and their relation to yarn strength.

S. T. Burley, Jr. and F. Carpenter. Wash., U. S. Agricultural Marketing Service, 1955. 19 p. AMS-71. Free.

Experiences in cotton-testing.

R. Walz. *Textil-Praxis (English ed.) No. 3:* 108-112 (September, 1955).

See *TTD 12:* 349 (August, 1955).

The micro-determination of chloride by the diffusion technique, and the chloride content of raw cotton.

H. Naylor (British Cotton Ind. Research Assoc.). *J. Textile Inst. 46:* T576-T583 (September, 1955); *Shirley Inst. Mem. 28:* 123-130 (April, 1955).

In the examination of textile materials it is sometimes necessary to determine small amounts of inorganic chloride in raw or wet-processed cottons, and a gravimetric technique described by Clibbens and Geake has usually been employed in the laboratories of the British Cotton Industry Research Association for that purpose. As this

method involves the collection of very small quantities of silver chloride in special apparatus, and its subsequent weighing on a microbalance, the diffusion technique devised by Conway has been examined as an alternative method of analysis, and has been improved by absorbing the chlorine in a solution of sodium arsenite. This eliminates the error in Conway's procedure due to volatilization of iodine from the absorbing solution. Maximum recovery of chlorine is obtained when the volume of test solution is a minimum and when a relatively large amount of sodium acetate is present. In applying the method to cotton, the cotton is ashed at 650°C in the presence of sodium carbonate. Analysis of twenty-three different cottons gave results, expressed as sodium chloride, ranging from 0.05 per cent to 0.15 per cent with a mean of 0.08 per cent. 8 references.

New Hungarian devices for testing cotton.

F. Hadwich. *Melliand Textilber. 36, No. 7:* 694-697 (1955); *in German.* Through *BCIRA 35:* 640 (1955).

The devices described (exhibited at the Leipzig Fair and developed by the Hungarian Textile Industry Research Institute) comprise an automatic staple-length tester, an electronic quality tester (for determining maturity and fiber strength and fineness), a pneumatic impurity tester for ginned cotton, and an apparatus for determining impurities in seed cotton.

Density gradient resolution of cortical cell fractions.

W. H. Ward and J. J. Bartulovich (U. S. Department of Agriculture, Western Utilization Research Branch). *(Letter to the editor). Textile Research J. 25:* 888-889 (October, 1955).

Microchemical reactions for the differentiation of synthetic fibers.

W. Kunze. *Reyon, Zellwolle u. Chemiefasern No. 6:* 386-387 (1955); *in German.* Summary in *BCIRA 35:* 641 (1955).

Contribution to the study of the resistance to fatigue of fibrous high polymers.

P. Mauvisseau. *Bull. Inst. Textile France No. 51:* 47-78 (1955); *in French.* Through *BCIRA 35:* 499 (1955).

The fatigue testing apparatus is described and mechanical properties of textile fibers and the quantitative relationship between fatigue and creep are discussed, with special reference to regenerated cellulose and nylon. It is shown that creep has a linear effect, whereas the ratio of elasticity modulus/breaking load has an exponential influence. These two intrinsic properties (rather than tests whose results depend upon parameters) make it possible to study the relationship between structure and wear properties of the fiber. Interpretation of the results shows that the behavior of fibrous high polymers to the action of repeated small stresses depends upon their amorphous portions; the less crystalline the fiber, the greater is its resistance to fatigue. 32 references.

YARNS E 2

The variance-length characteristics in spinning.

W. Wegener and W. Zahn. *Melliand Textilber. 36, No. 7:* 686-691; *No. 8:* 776-780 (1955); *in German.* Through *BCIRA 35:* 686 (1955).

Experiments were carried out to ascertain whether it is possible to evaluate the efficiency of the individual processing stages from the variance-length curves obtained by cutting and weighing four different yarns. In Part 2, the curves were obtained by means of an Integraph (with an integration time of 350 sec). The apparatus is described. 21 references.

The electronic dynamometer and one of its specific applied uses. Part 2.

J. K. van Wijngaarden. *Enka Breda Rayon Rev. (English ed.) 9:* 184-191 (September, 1955).

An electronic dynamometer of simple design made by the AKU is described.

Nomogram for the calculation of nominal yarn strength on the basis of the fiber test.

O. Meissner. *Textil-Praxis (English ed.) No. 3:* 103-104 (September, 1955).

See *TTD 12:* 414 (September, 1955).

New method for predicting cotton yarn strength from the observed strength of a single count.

P. R. Ewald and C. B. Landstreet. *Textile Research J. 24:* 1064-1068 (December, 1954).

The skein strength of any count for a spinnable cotton yarn may be predicted by measuring the fineness of the cotton fibers concerned and then spinning one count of (preferably) a coarse yarn under optimum conditions. The skein strength of the count and the fineness can then be substituted into a formula to predict the strength of any other count. 4 references.

FABRICS E 3

The abrasion tester SVAH.

H. Kagi. *Textil-Rundschau 10, No. 6:* 296-301 (1955); *in German.* Through *BCIRA 35:* 644 (1955).

The tester described (developed by the Swiss Research Institute and constructed by Huggenberger, Zurich) can be adapted, by means of easily exchangeable devices, for carrying out abrasion tests on fabrics and knitted goods by three different methods: spherical abrasion (for testing the wear resistance of heel and toe parts of stockings), flat abrasion (wear and tear, noils, shiny places) and abrasion on folds. The abrasion process approaches that of natural wear and tear of the fabrics.

Textiles: testing the abrasion resistance of fabrics, hosiery and knitted goods by means of flat brushes moving to and fro. Spherical abrasion.

Swiss Standards Institution. *Textil-Rundschau 10, No. 6:* 305-311 (1955); *in German.* Through *BCIRA 35:* 644 (1955).

The Swiss standard specification SNV 98 5 34 lays down the definition of abrasion resistance, and describes the testing apparatus, sampling and preparation of the samples, method of testing, and evaluation of the results. The SVAH abrasion tester is mentioned as a suitable standard apparatus.

Method of test for the quantitative chemical analysis of intimate mixtures of secondary cellulose acetate with certain other fibers.

J. Textile Inst. 46: S101-S103 (September, 1955).

Tentative textile standard, No. 33, 1955.

The identification of fibers blended with wool in textiles (binary mixtures only).

J. Textile Inst. 46: S104-S106 (September, 1955).

Tentative textile standard No. 34, 1955.

Determination of the constituents in asbestos-glass-organic fibers textile materials.

G. Satlow (Leeds University). *(Letter to the editor). J. Textile Inst. 46:* T631-T632 (September, 1955).

Quality control program for Zeset-treated fabrics.

Du Pont Tech. Bull. 11: 126-130 (September, 1955).

Specifications and details of test procedures for cotton fabrics treated with Zeset fabric stabilizer.

Fabric embedding for microtome sectioning.

I V. DeGruy (Southern Regional Research Laboratory). *(Letter to the editor). Textile Research J. 25:* 887-888 (October, 1955).

OTHER E 4

A new rapid method for determining the removability of spinning oils by washing.

G. Nitschke and M. Wernecke. *Textil- u. Faserstofftech. 5, No. 8:* 479-481 (1955); *in German.* Summary in *BCIRA 35:* 672 (1955).

Device for testing the crocking fastness on fiber tufts, yarn and fabrics.

F. Ruf. *Melliand Textilber. 36, No. 7:* 755 (1955); *in German.* Through *BCIRA 35:* 648 (1955).

The tester, described and illustrated, makes it possible to measure the dry and wet crocking fastness of fiber tufts, yarn, and fabrics according to the German specification DIN 53959. The result is not affected by moderate variations in pressure, thickness differences in the web, rate of the rubbing motions, and rubbing direction (with respect to the position of the fibers or yarn). The reproducibility is excellent. The device is manufactured by Karl Schroder KG., Weinheim/Bergstraze.

The choice of fastness degree in dyeing and printing.

C. Foulon. *Industrie Textile:* 471-473 (June, 1955); *in French.* Through *BCIRA 35:* 647 (1955).

Methods of testing materials for their fastness to light, fulling, washing, rubbing, perspiration, decatizing, hot ironing, water, seawater, acid dyeing, chlorine, sulfur, and carbonization, are briefly outlined and tables are given, listing minimum fastness values required from various articles in view of their uses.

The problem of tendering of viscose textiles by light.

T. N. Kleinert and V. Moessmer. *Textil-Rundschau 10, No. 7:* 353-359 (1955); *in German.* Through *BCIRA 35:* 646 (1955).

Cellulose materials (both natural and regenerated) are attacked by sunlight; in both cases, the lustrous fibers are less damaged than the dull ones, the degree of tendering increasing with the fiber fineness. Titanium-dioxide delustered fibers usually show considerable damage by light. Titanium-dioxide pigments may, in some cases, enhance a series of photochemical reactions which

cause great damage to the fibers even after a brief exposure to light. Contamination of the textiles with acids, as well as the acid groups formed by oxidative reactions in the cellulose material itself, favor the degradation by light. In the presence of titanium dioxide pigments, the sulfur in the fiber is easily oxidized to free sulfuric acid which affects the fibers on exposure to light. Residues of metal salts (copper and chromium compounds) and of oxygen-liberating detergents and bleaching agents can also damage the fiber under the action of light.

Quantitative spectrographic analyses of metallic elements in textile materials.

L. C. Block and D. C. W. Kwok (Lowell Technological Institute). *Textile Research J. 24:* 990-999 (November, 1954).

Four methods of analysis are compared. 4 references.

Contribution to the degradation of cellulose by light owing to delustering pigments (titanium dioxide).

W. Lang, E. Treiber and E. Mader. *Reyon, Zellwolle u. Chemiefasern No. 6:* 383-385 (1955); *in German.* Through *BCIRA 35:* 646 (1955).

Literature on the degradation of cellulose by titanium dioxide pigments is reviewed and experiments are described in which an attempt is made to determine the photo-oxidation processes of titanium dioxide from its adsorption of Methylene Blue and iodine, respectively. It was found that very active pigments adsorb more than inactive (or less active) pigments. The photosensitizing activity of titanium dioxide was found to be considerably reduced by adsorption of certain metal hydroxides. 20 references.

The choice of a comparison scale for testing the stability to light of man-made fibers.

A. Sippel. *Textil-Praxis 10, No. 7:* 679-684 (1955); *in German.* Through *BCIRA 35:* 646 (1955).

There are two possibilities of testing the stability to light of fibers: (1) the use of a comparison or standard fiber with which the fibers tested for changes in tensile strength as a result of exposure to light are compared, and (2) the use of a color standard for the comparison of the color changes taking place in the dyed fiber under the action of light. The advantages and disadvantages of the two methods are discussed.

INDUSTRIAL ENGINEERING F

Which types of buildings are best suited for the textile industry?

G. Wilcken. *Textil-Praxis (English ed.) No. 3:* 97-103 (September, 1955).

Calculation and determination of overlapping times in the case of one operator attending to several machines.

Textil-Praxis 10, No. 6: 561-566 (1955); *in German.* Through *BCIRA 35:* 613 (1955).

Four methods are described and the Ashcroft table and its use for determining machine productivity, in the case of one man attending to several machines, are explained. Reference is also made to the formulae of M. Gross for the theoretical determination of overlapping times in multi-machine operations.

Mill construction.

G. B. Howcroft. *J. Textile Inst. 46:* P424-P441 (August, 1955).

After a brief survey of building constructions in old-time spinning mills and weaving sheds, the author describes the ideal all-purpose single-story building, and lists the materials at the builder's disposal. Concrete roofs and steel framed roofs are considered in detail. After touching briefly on problems of heating and noise, the various types of floors available are described. Division of the building to lessen risk of fire is thought desirable and fluorescent lighting is preferred. The single-story building is compared with typical modern American factories. Two-story and multi-story buildings are discussed briefly as well as the particular problems of buildings for wet processes.

Power production.

A. W. Berry and J. H. Sutcliffe. *J. Textile Inst. 46:* P442-P469 (August, 1955).

After a general introduction, an example of a British spinning mill which changed from steam engine to electrical drive is fully described and discussed. Details of operating costs are given. The second section of the paper deals with steam raising. Different types of boilers, automatic stokers and grates are briefly described, the need for instrumentation, testing and records is emphasized and comments are made on methods and types of plant which have been found to be of value. Particular attention is paid to the possibility of burning cheap low-grade fuel. The third section discusses the use of electrical power and the fourth deals with methods of power factor improvement. These sections are followed by one on combined heat-electricity generation: the advantages of the simple back-pressure machine are stressed. The paper ends with brief remarks on oil fuel and on the diesel engine.

Economics of re-equipment.

G. H. Jolly. *J. Textile Inst. 46:* P491-P515 (August, 1955).

The economics of re-equipment are discussed under the following headings: (1) Possible reasons for re-equipment, e.g., improved quality, working conditions, increased total production or production per man hour, and cost reduction. (2) The influence on the economics of re-equipment of the relative costs of machines and labor, including observations on the trends of these costs. (3) Examples of the effect on costs of certain forms of re-equipment in spinning mills. (4) Various methods of using new equipment in order to justify its installation on economic grounds. (5) General conclusions concerning the economics of re-equipment, in the light of the points considered in the paper.

MACHINERY AND MAINTENANCE F 1

What mill men are looking for from machinery builders.

J. L. Delany (Joanna Cotton Mills). *Textile Bull. 81:* 77-79 (October, 1955).

Speech before the South Carolina Division, Southern Textile Association.

QUALITY CONTROL F 3

Improved simplified analysis chart.

N. L. Enrick. *Modern Textiles Mag. 36:* 60 (October, 1955).

An improved chart is furnished for analyzing the flow of variations from process to process, within-machines and between-machines, in the yarn mill.

OTHER F 4

A study of bath towel cutting.

M. Suchet. *Time and Motion Study 4, No. 7:* 19-21 (1955). Through *BCIRA 35:* 629 (1955).

The object of this study was to make the task of cutting bath towels easier, quicker, more economical and less fatiguing for the operative.

SCIENCES G

CHEMISTRY G 1

The interface behavior of carboxymethylcellulose on cotton.

J. Stawitz, W. Klaus and H. Kramer. *Kolloid Z. 142, Nos. 2 and 3:* 166 (1955); *in German.* Through *BCIRA 35:* 687 (1955).

In order to investigate the behavior of CMC at the cotton/water interface (of great interest with regard to the washing-process theory), solutions of a radio-active CMC-preparation were prepared over a concentration range of 0.00005-0.025 per cent and their radiation intensity determined. In adsorption tests, solutions with 0.02 per cent CMC in distilled water were allowed to act on cotton for 1 hour at 24°C (at a wash-liquor ratio of 1:50). Prior to the test, the cotton fibers (cut into 1 mm lengths) were boiled with 2 per cent sodium hydroxide in nitrogen atmosphere and extracted with solvents. On testing it was found that the concentration of the CMC-solution is not reduced by the contact with cotton, and the fibers show only very small amounts of CMC (of the order of several γ/g of fiber) adhering to them. These results exclude the possibility of even a monomolecular CMC-film forming on the cotton fibers.

The effect of temperature on the adsorption of iodine by cellulose.

A. G. Chitale (Ahmedabad Textile Industry's Research Assoc.). *(Letter to the editor). Textile Research J. 25:* 886-887 (October, 1955).

The reduction of the aldehyde groups in hydrocelluloses by sodium borohydride.

F. S. H. Head (British Cotton Ind. Research Assoc.). *J. Textile Inst. 46:* T584-T586 (September, 1955); *Shirley Inst. Mem. 28:* 203-205 (May, 1955).

The reducing power (copper number) of hydrocelluloses and the loss in weight they suffer on boiling with dilute alkali can be diminished to very low values by treatment of the hydrocelluloses with aqueous sodium borohydride. These results show that, under suitable conditions, virtually all the aldehyde groups in hydrocelluloses are reduced by borohydride; they are, however, much less easily reduced than those in periodate oxycelluloses. 4 references.

Synthetic detergents and emulsifiers—up to date. Part 4.

J. W. McCutcheon. *Soap and Chemical Specialties 31:* 49-67 (October, 1955).

Detergency measurement using artificially-soiled cloths.

F. L. Diehl and J. B. Crowe (Procter and Gamble Co.). *Am. Dyestuff Reptr. 44:* 677-680 (September 26, 1955).

Four types of artificially-soiled cloths are compared in their ability to rate detergents in the same order as naturally-soiled clothes rate detergents. Results show that artificially-soiled cloths must be used advisedly. 15 references.

PVP and its applications.

R. J. Holmes and D. B. Witwer (General Aniline and Film Corp.). *Am. Dyestuff Reptr. 44:* P702-P704 (September 26, 1955).

This paper is mainly concerned with polyvinylpyrrolidone uses in the textile industry.

Cellulose studies. Part 19. Distribution of methoxyl groups in partly methylated celluloses.

L. Rebenfeld and E. Pacsu (Textile Research Institute). *Textile Research J. 24:* 941-955 (November, 1954).

PHYSICS G 2

The friction of textile fibers.

L. Cormann. *Melliand Textilber. 36, No. 8:* 780-784 (1955); *in German.* Summary in *BCIRA 35:* 681 (1955).

A review. 24 references.

MISCELLANY H

16th modern equipment and processing review.

Textile Ind. 119: 99-189 (November, 1955).

Contains descriptions of machines, supplies, and services that have been developed or improved since November 1954.

The Brussels show. Part 2.

Textile World 105: 108-111, 242-252 (October, 1955).

International Congress of Scientific Research Applied to the Textile Industry. Part 2.

Fibres 16: 321-324 (September, 1955).

Summaries of those papers read at the Congress, which dealt with wool, cotton, and bast and leaf fibers, and with matters of general interest such as testing.

Textile schools and research abroad.

H. M. Brown (Clemson Textile School). *Bobbin and Beaker 14:* 6-8, 22 (1955).

An account of a European tour made by the National Council for Textile Education.

Economic and technical problems associated with the development and introduction of a textile invention.

G. F. Raper. *J. Textile Inst. 46:* P516-P533 (August, 1955).

Inventors and research workers must recognize the importance of the economic aspect of progress. Difficulties they will meet arise from present practice, capital equipment, personnel in industry, traditional methods in the use of materials, the structure of industry, the recognized types and standards of yarns and fabrics, the cost of perfecting an invention and its timing. The resources for progress in machine development, the machine makers, the research organizations, and the mills are examined and criticized. Suggestions are made for improving the rate of progress. The author offers advice to inventors and those in charge of research and development. Present and future trends of invention in the worsted industry are discussed.

Catering for the trade buyer.

S. B. L. Jacks. *J. Textile Inst. 46:* P576-P584 (August, 1955).

The author discusses the relations of producers (both horizontally and vertically organized), merchant converters, buyers and retailers. He deplores the fact that many who are highly skilled in their own particular section of the textile industry are ignorant regarding sections in which they are not directly engaged. Wider all-round knowledge could not be other than beneficial and might help to avoid seasonal inactivities.

Catering for the ultimate consumer.

P. Roake. *J. Textile Inst. 46:* P585-P590 (August, 1955).

This paper represents the point of view of a retail buyer. If he is to do his work effectively, he needs wide experience and specialized knowledge. He must also be able to anticipate demand and interpret trends. The best way to anticipate demand is to create it. This can best be achieved by the fostering of mutual confidence between the varied sections of the trade, both producers and distributors. The importance of the converter-wholesaler is emphasized.

New process and expanding markets with special reference to the hosiery industry.

D. Starkie. *J. Textile Inst. 46:* P549-P560 (August, 1955).

Changed conditions in the knitting industry are surveyed briefly, the importance of maintaining technical superiority being stressed. Examples drawn from hosiery research on yarns and knitting control are set out at length to illustrate the improvements which can be brought about in industry as a result of research. Finally, the author describes steps taken by the Hosiery and Allied Trades Research Association to obtain more speedy application of research results in the hosiery mills.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

NATURAL FIBERS A 1

Process of treating cut, ripened linseed flax straw.

J. Litvan and A. Glaser (Hungary). USP 2 721 358, October 25, 1955.

Apparatus for decorticating of plant leaves.

J. McCrae. USP 2 722 039, November 1, 1955.

YARN PRODUCTION B

Stopping device for staple fiber cutter.

E. C. Gibson and L. C. Holt (to Chemstrand Corp.). USP 2 722 983, November 8, 1955.

Snubber device for a weighing hopper in a fiber handling machine.

A. W. Gardes (to Houdaille-Hershey of Indiana, Inc.). USP 2 723 058, November 8, 1955.

CARDING AND COMBING B 2

Increasing the speed of operation of a rectilinear comber without sacrificing quality.

J. R. Foster (to T. M. M. (Research) Ltd). BP 727 823, April 6, 1955. Through *BCIRA 35:* 624 (1955).

Variable speed mechanism for carding apparatus.

C. W. Carter and J. S. Cowhey (to Bigelow-Sanford Carpet Co., Inc.). USP 2 720 006-007, October 11, 1955.

Driving mechanism for carding machines.

A. Viehweger. USP 2 720 123, October 11, 1955.

Method and device for treating kapok preparatory to spinning.

R. Vranckx-Deroover (Belgium). USP 2 721 360, October 25, 1955.

DRAWING AND ROVING B 3

Apron tensioning devices for textile drawing heads.

Zinser Textilmaschinen GmbH (Germany). BP 727 531, April 6, 1955. Through *BCIRA 35:* 625 (1955).

Method of drafting twisted assemblies of fiber without first removing the twist.

F. Ashton. BP 727 651, April 6, 1955 Through *BCIRA 35:* 625 (1955).

High-draft device with three groups of rollers.

Hilaturas Ibericas S. A. (Spain). BP 727 697, April 6, 1955. Through *BCIRA 35:* 625 (1955).

Drafting device consisting of two pairs of drafting rollers between which is a large pressure roller bearing down equally on two smaller rollers.

B. Bisinger (Germany). BP 727 803, April 6, 1955. Through *BCIRA 35:* 625 (1955).

SPINNING, WINDING, TWISTING B 4

Device for indicating yarn failure between a supply bobbin and a take-up package when twisting fine yarns under slight tension.

E. R. Goshawk, D. Hutchinson, G. M. Swindells and A. Wainwright (to Fine Spinners and Doublers Ltd). BP 727 025, March 30, 1955. Through *BCIRA 35:* 626 (1955).

Centrifugal twisting machine unit.

E. E. Feather (to Prince-Smith and Stells Ltd). BP 727 269, March 30, 1955. Through *BCIRA 35:* 626 (1955).

Driving and guiding devices for the vertical motions of slubbing, roving, spinning and twisting frames.

Schiess AG (Switzerland). BP 727 795, April 6, 1955. Through *BCIRA 35:* 626 (1955).

Means for reducing the number of winding stages in the processing of yarn.

P. S. Rendall (to Courtaulds Ltd). BP 727

822, April 6, 1955. Through *BCIRA 35:* 626 (1955).

Regulator for controlling spindle speeds.

Societe des Fabrications Unicum (Spain). BP 727 847, April 6, 1955. Through *BCIRA 35:* 626 (1955).

Creel arrangement for reserve packages feeding a spinning frame.

Schiess AG (Germany). BP 727 854, April 6, 1955. Through *BCIRA 35:* 625 (1955).

Hydraulically operated yarn package building motions.

D. A. Clough (to T.M.M. (Research) Ltd). BP 727 928, April 13, 1955. Through *BCIRA 35:* 667 (1955).

Pneumatic spinning spindle drives.

M. Fischer and O. Stalder (Switzerland). BP 728 035, April 13, 1955. Through *BCIRA 35:* 666 (1955).

Spindle bearing with which vibrations are damped even at very high speeds and with large packages.

Vereinigte Kugellagerfabriken AG (Germany). BP 728 086, April 13, 1955. Through *BCIRA 35:* 666 (1955).

Yarn twister for applying false twist.

H. M. Brown (to Clemson Agricultural College). USP 2 718 111, September 20, 1955.

A spinning ring of porous material adapted to absorb a lubricant.

A. J. Wayson (to Merriman Brothers, Inc.). USP 2 718 112, September 20, 1955.

Traveler for use on a vertical doubling ring having at least one square end.

A. G. A. Colbeck and F. G. Thorpe (to Morgan Crucible Co. Ltd). USP 2 718 748, September 27, 1955.

Thread suction means on spinning frames.

H. Buhler (Switzerland). USP 2 720 074, October 11, 1955.

Bobbin adaptor.

J. K. Cochran (to Duplan Corp.). USP 2 720 075, October 11, 1955.

Process for producing direct spun yarns from strands of continuous fibers.

H. E. New (to American Viscose Corp.). USP 2 721 440, October 25, 1955.

YARNS B 5

Machine for facilitating the packaging of hanks of yarn for the retail trade.

J. W. Loweth. BP 727 172, March 30, 1955. Through *BCIRA 35:* 639 (1955).

Slub catcher.

A. L. Burnet and H. J. Woods (to Burlington Industries, Inc.). USP 2 720 019, October 11, 1955.

Yarn clearer.

M. E. Tager. USP 2 720 020, October 11, 1955.

Disk type yarn tensioning device.

W. S. Brown (to British Celanese Ltd). USP 2 720 366, October 11, 1955.

FABRIC PRODUCTION C

WARPING, SLASHING, YARN PREPARATION C 1

Device for preventing pattern winding in cone winding.

Thomas Holt Ltd. BP 727 027, March 30, 1955. Through *BCIRA 35:* 629 (1955).

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Beam in which the flange has a bearing portion made in two parts.

H. R. Heatley (to Heatley and Son Ltd). BP 728 215, April 13, 1955. Through *BCIRA 35:* 671 (1955).

Method of treating nylon yarn whereby the yarn will hold its high twist for subsequent processing without setting or shrinking the yarn.

M. H. Comer (to Standard Hosiery Mills). USP 2 717 486, September 13, 1955.

Weft handling mechanism for automatic filling winder.

G. C. Joyce (to Whitin Machine Works). USP 2 718 360, September 20, 1955.

Method of setting the twist of twisted wool yarns.

D. H. Powers and O. P. Cohen (to Monsanto Chemical Co.). USP 2 723 213, November 8, 1955.

WEAVING C 2

Circular looms for weaving hose.

C. Christiansen and G. O. K. Rusch. BP 727 004, March 23, 1955. Through *BCIRA 35:* 630 (1955).

Weft cutter mechanism of a device for automatic weft replenishment.

Prototypa Nar. pod. (Czechoslovakia). BP 727 016, March 30, 1955. Through *BCIRA 35:* 630 (1955).

Jacquard selector bars.

H. Batty and J. Ashworth (to John T. Hardaker Ltd). BP 727 177, March 30, 1955. Through *BCIRA 35:* 630 (1955).

Shedding motion adjusting gear.

Gesellschaft zur Forderung der Forschung (Switzerland). BP 727 367, March 30, 1955. Through *BCIRA 35:* 630 (1955).

Method of manufacturing reeds for looms.

P. F. Hansen (Denmark). BP 727 546, April 6, 1955. Through *BCIRA 35:* 630 (1955).

Means for actuating the drop-box of a loom.

I. H. Thomas and F. Davies (to British Cotton Ind. Research Assoc.). BP 727 594, April 6, 1955. Through *BCIRA 35:* 630 (1955).

Means for avoiding weft-way contraction in weaving.

S. S. C. Fleischer and C. C. Thomsen. (Denmark). BP 727 644, April 6, 1955. Through *BCIRA 35:* 631 (1955).

Safety device to avoid damage to Jacquard card cylinders.

H. D. Walker (to Peter Walker (Blackburn) Ltd). BP 727 647, April 6, 1955. Through *BCIRA 35:* 630 (1955).

Yarn carriers for gripper Axminster carpet looms.

J. A. Rennie (to James Templeton and Co. Ltd). BP 728 216, April 13, 1955. Through *BCIRA 35:* 671 (1955).

Self-threading weaving shuttle with plastic threading block.

W. J. Gosselin (to U. S. Bobbin and Shuttle Co.). USP 2 717 616, September 13, 1955.

Temple thread cutter.

E. C. Nichols (to Draper Corp.). USP 2 718 242, September 20, 1955.

Two-shot modified Axminster weave.

R. R. Matthews (to Firth Carpet Co., Inc.). USP 2 718 243, September 20, 1955.

Picker stick check.

C. H. Sanders. USP 2 719 539, October 4, 1955.

Cloth beam take-up device for weaving looms.

J. Picanol (Belgium). USP 2 719 540, October 4, 1955.

Laminated plastic shuttle.

G. W. Neely (to Richardson Co.). USP 2 720 224, October 11, 1955.

Method of weaving a pile carpet.

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 720 222, October 11, 1955.

Method and apparatus for periodically gaging equal length of thread and weaving with different colors or sorts of weft in shuttleless weaving looms.

V. Svaty (Czechoslovakia). USP 2 720 223, October 11, 1955.

Thread clamp for looms.

C. G. Moon (to Draper Corp.). USP 2 720 225, October 11, 1955.

Electrical circuit controlling thread cutter for looms.

B. J. Maynor and W. C. Fincher. USP 2 721 583, October 25, 1955.

Arrangement for stopping and starting a loom provided with automatic shuttle-changing means.

J. Fumat (to Societe de Montage pour l'Industrie Mecanique). USP 2 722 239, November 1, 1955.

Fabric wind-up means for looms.

W. J. Budzyna and L. M. Rogers (to Draper Corp.). USP 2 722 240, November 1, 1955.

Loom roll cover material.

T. M. Knowland and C. R. Stahle (to Boston Woven Hose and Rubber Co.). USP 2 722 730, November 8, 1955.

Heddle frames.

F. H. Kaufmann (to Steel Heddle Mfg. Co.). USP 2 722 950, November 8, 1955.

Looms.

Federico de los Santos Izquierdo (Mexico). USP 2 722 950, November 8, 1955.

KNITTING C 3

Circular knitting machine.

P. W. Bristow (to Scott and Williams, Inc.). USP 2 717 509, September 13, 1955.

Knitting machine.

L. O. Wilkie (to Scott and Williams, Inc.). USP 2 717 510, September 13, 1955.

Knitted hosiery fabric.

J. A. Rossak (to ARWA Feinstrumpfwirkerei GmbH). USP 2 717 511, September 13, 1955.

Manufacture of looped fabrics.

F. Seiler (to Edouard Dubied and Cie, Switzerland). USP 2 718 129, September 20, 1955.

Straight-frame knitting machine.

E. E. Hafner (to Dubied Machinery Co.). USP 2 718 130, September 20, 1955.

Beam drive for knitting machine.

M. E. Ebert (to Alfred Hofmann and Co.). USP 2 718 768, September 27, 1955.

Circular knitting machine.

R. H. Lawson (to Scott and Williams, Inc.). USP 2 719 415, October 4, 1955.

Circular knitting machine for producing knitted articles of footwear.

A. P. Saunders (to Wildt and Co. Ltd). USP 2 719 416, October 4, 1955.

Pick mechanism for circular knitting machines.

E. St. Pierre and J. Wawzonek (to Hemphill Co.). USP 2 719 417, October 4, 1955.

Warp let-off mechanism for knitting machines.

C. J. Fleckenstein (to Celanese Corp.). USP 2 719 419, October 4, 1955.

Yarn feeding mechanism for a circular, independent needle, knitting machine.

E. St. Pierre and J. Wawzonek (to Hemphill Co.). USP 2 719 420, October 4, 1955.

Knitting machine of the superposed cylinder type.

A. L. Oberholtzer (to Scott and Williams, Inc.). USP 2 720 092, October 11, 1955.

Warp knitting machine.

F. Lambach and W. Siegel (to Robert Reiner, Inc.). USP 2 720 093, October 11, 1955.

Let-off mechanism for warp knitting machines.

G. E. Clentimack (to Draper Corp.). USP 2 720 094, October 11, 1955.

Yarn carrier.

E. A. Feustel and K. E. Hoefer (to Ernest A. Feustel, Inc.). USP 2 720 096, October 11, 1955.

Circular knitting machine.

V. Lombardi. USP 2 721 460, October 25, 1955.

Yarn carrier for full-fashioned knitting machines.

E. W. Kaul (to Textile Machine Works). USP 2 721 461, October 25, 1955.

Drive apparatus for circular knitting machines.

O. Griesbach (to Bayerische Berg-, Hutten- und Salzwerke AG). USP 2 722 116, November 1, 1955.

Narrowing finger for knitting machine.

W. M. Golaski. USP 2 722 117, November 1, 1955.

Hosiery inspecting and handling apparatus.

E. R. Ammon (to Southern Textile Machinery Co., Inc.). USP 2 722 348, November 1, 1955.

Hosiery trimming device.

H. E. Stout (to Textile Trimming and Boarding Machine Co., Inc.). USP 2 722 728, November 8, 1955.

Knitting graph guide.

A. P. Ferlazzo. USP 2 722 814, November 8, 1955.

Straight bar knitting machine.

K. W. Wickardt (to Hosemaster Machine Co. Ltd). USP 2 722 815, November 8, 1955.

FABRICS C 4

Reinforcing a web with transverse strands or filaments.

American Sisalkraft Corp. BP 727 084, March 30, 1955. Through *BCIRA 35:* 624 (1955).

Fused fabric assemblies.

L. Bihaly (to Trubenised (Gt. Britain) Ltd). BP 727 933, April 13, 1955. Through *BCIRA 35:* 672 (1955).

Tubular woven blanket structure with a series of channels for receiving an electric heating element.

V. C. Keily and A. J. Smith (to Orr Felt and Blanket Co.). USP 2 722 951, November 8, 1955.

FINISHING AND CHEMICAL PROCESSING D

Compressive shrinking of stitched fabric assemblies which have parts that differ in thickness from the main body.

B. E. Screeton, J. M. Holmes and G. C. Rogers (to Bradford Dyers' Assoc. Ltd). BP 727 569, April 6, 1955. Through *BCIRA 35:* 638 (1955).

Bonding and compressive shrinkage of pre-shrunk multiply fabric or article having inner plies of thermoplastic material.

J. G. Evans, G. Landells, B. E. Screeton, J. M. Holmes and G. C. Rogers (to Bradford Dyers' Assoc. Ltd). BP 727 591, April 6, 1955. Through *BCIRA 35:* 638 (1955).

Spacing element on sewing machine to reduce puckering in seam stitching.

R. Lomax, J. T. Marsh, E. Martin and A. G. Thompson (to Tootal Broadhurst Lee Co. Ltd). BP 727 884, April 13, 1955. Through *BCIRA 35:* 672 (1955).

Cloth inspecting apparatus.

A. Laszlo. BP 728 127, April 13, 1955. Through *BCIRA 35:* 681 (1955).

Cloth shrinking and finishing apparatus.

S. L. Cluett and G. A. Schreiner (to Cluett, Peabody and Co., Inc.). USP 2 721 370, October 25, 1955.

Door operated traffic surface for textile treating cabinet.

H. Richter and H. N. Campbell (to Paramount Textile Machinery Co.). USP 2 723 176, November 8, 1955.

CHEMICAL PROCESSES D 1

Water-repellent finish.

Ciba Ltd. (Switzerland). BP 727 015, March 30, 1955. Through *BCIRA 35:* 639 (1955).

Pile fabric made from flocked knitted fabrics.

H. Ewing (to British Celanese Ltd). BP 727 143, March 30, 1955. Through *BCIRA 35:* 638 (1955).

Fireproof fabric.

A. D. Clarke (to Commercial Plastics Ltd). BP 727 163, March 30, 1955. Through *BCIRA 35:* 639 (1955).

Coated flexible sheet with at least one porous layer.

Farbenfabriken Bayer AG (Germany). BP 727 321, March 30, 1955. Through *BCIRA 35:* 638 (1955).

Bactericidal salicylanilides.

J. R. Geigy AG (Switzerland). BP 727 343, March 30, 1955. Through *BCIRA 35:* 639 (1955).

Permonosulfuric acid and its salts as bleaching agents for textiles other than wool.

E. T. Fell (to Stevensons (Dyers) Ltd). BP 727 419, March 30, 1955. Through *BCIRA 35:* 635 (1955).

Coating of high-tenacity cellulose acetate products with vinyl chloride polymers and co-polymers.

A. H. Gentle and T. Jackson (to British Celanese Ltd). BP 727 570, April 6, 1955. Through *BCIRA 35:* 680 (1955).

Acceleration of bleaching by means of ozone.

H. Loosli (Germany). BP 727 771, April 6, 1955. Through *BCIRA 35:* 635 (1955).

Tootal anti-crease treatment of rayon, cotton and linen fabrics.

J. T. Marsh (to Tootal Broadhurst Lee Co. Ltd). BP 727 881, 882, 888, 889, 890, April 13, 1955. Through *BCIRA 35:* 680 (1955).

Crease-resistant finish on rayon fabrics.

Phrix Werke AG (Germany). BP 727 919, April 13, 1955. Through *BCIRA 35:* 680 (1955).

Salicylanilides and their use.

J. R. Geigy AG (Switzerland). BP 728 098, April 13, 1955. Through *BCIRA 35:* 680 (1955).

Treatment of nylon stockings with a colloidal solution of silica.

J. Payne and K. C. Bryant (to Monsanto Chemicals Ltd). BP 728 237, April 13, 1955. Through *BCIRA 35:* 680 (1955).

Apparatus for the fluid treatment of filamentary material.

F. Wiskemann (Italy). USP 2 720 100, October 11, 1955.

Bleaching polyacrylonitrile fibers.

J. G. Wallace (to E. I. du Pont de Nemours and Co.). USP 2 720 440, October 11, 1955.

Peroxygen bleaching of nylon.

J. G. Wallace (to E. I. du Pont de Nemours and Co.). USP 2 720 441, October 11, 1955.

Method of treating tows in tubes.

J. F. Keggin (to Imperial Chemical Industries Ltd). USP 2 720 442-443, October 11, 1955.

Apparatus for liquid treatment of textile fabrics.

L. L. Walmsley (to American Viscose Corp.). USP 2 721 465, October 25, 1955.

Apparatus for the countercurrent liquid treatment of yarn.

T. L. Nash (to American Viscose Corp.). USP 2 721 466, October 25, 1955.

Fastening means for yarn packages.

A. S. Pole (to Samuel Pegg and Son Ltd). USP 2 721 468, October 25, 1955.

Process of reacting cellulose fibers with beta-propiolactone.

G. C. Daul, J. D. Reid and R. M. Reinhardt (to United States of America). USP 2 721 784, October 25, 1955.

Method of making a breathable coated nylon fabric.

W. F. Dacey, R. A. Gregg and N. W. Hess (to United States Rubber Co.). USP 2 721 811, October 25, 1955.

Method of finishing a woven multi-ply fabric.

E. Thorp (England). USP 2 722 486, November 1, 1955.

Liquid treating apparatus for filamentary material.

J. A. Truitt (to American Viscose Corp.). USP 2 722 817, November 8, 1955.

Flame retardant, water repellent compositions.

R. Aarons and D. Wilson (to E. I. du Pont de Nemours and Co.). USP 2 723 212, November 8, 1955.

DYEING AND PRINTING D 2

Dyeing machine with fan or propeller for circulating dye liquor.

T. R. Purvis. BP 727 430, March 30, 1955. Through *BCIRA 35:* 636 (1955).

Compositions suitable for the production of a soft, moisture-proof printed fabric.

Badische Anilin- und Soda-Fabrik (Germany). BP 727 598, April 6, 1955. Through *BCIRA 35:* 638 (1955).

Method of controlling the migration of metallized dyes between dye bath and fabric.

S. Mooradian and H. E. Millson (to American Cyanamid Co.). USP 2 723 178, November 8, 1955.

Process of coloring glass fabrics with a resinous coating dyed with a vat dye.

C. L. Lawsberg (to General Aniline and Film Corp.). USP 2 722 488, November 1, 1955.

Process of coloring glass fabrics with vat dyes.

J. H. Hennessey and P. J. Choquette (to General Aniline and Film Corp.). USP 2 722 489, November 1, 1955.

MECHANICAL PROCESSES D 3

Manufacture of fan-pleated holland blinds.

U. L. Orchard-Lisle and A. H. G. Girling. BP 727 152, March 30, 1955. Through *BCIRA 35:* 639 (1955).

Shrinkage controlling means.

C. Blount, Jr. (to United Piece Dye Works). USP 2 720 018, October 11, 1955.

TESTING AND MEASUREMENT E

Fabric abrasion testing machine.

R. R. Allen and R. J. Novotny (to Custom Scientific Instruments, Inc.). USP 2 721 473, October 25, 1955.

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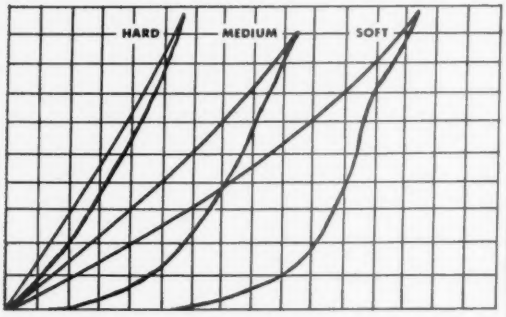

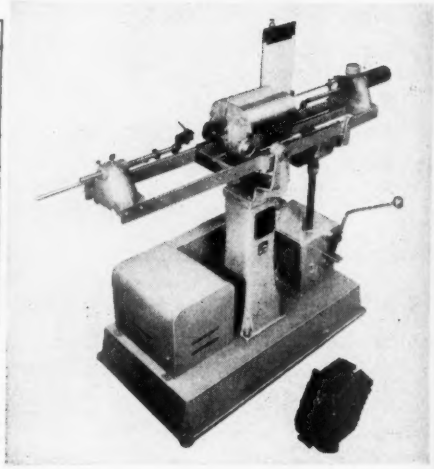

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